AMENDMENTS TO THE CLAIMS

Please add claims 13-24. A complete listing of the claims, including their current status, is provided below.

1. **(Original)** An ionization chamber for an ion source, said ionization chamber comprising an inert super alloy.

2. **(Original)** An ionization chamber as recited in claim 1, wherein said inert super alloy is Inconel™ 625.

3. **(Original)** A system for analyzing a sample having constituents, said system comprising an ion source having an ionization chamber with inward facing surfaces defining an interior volume, wherein said interior volume is exposed to said constituents and said ionization chamber comprises a substrate and an inward facing surface layer supported by said substrate, said layer comprising a super alloy.

4. **(Original)** An ionization chamber for an ion source, said ionization chamber having an inner surface comprising a conductive material selected from the group consisting of Inconel™ 625, Inconel™ 601 and Hastelloy®.

5. **(Original)** An ionization chamber as recited in claim 4, wherein said inner surface has a resistivity lower than 0.001 ohm-cm.

6. **(Original)** An ionization chamber as recited in claim 4, wherein said inner surface is an outer surface of a coating.

7. **(Original)** An ionization chamber as recited in claim 4, additionally comprising a substrate positioned to support said inner surface.

8. **(Original)** An ionization chamber for an ion source, said ionization chamber having a coated inner surface for reducing interaction with reactive samples, wherein said coated inner surface comprises an abrasion-resistant Inconel™ 625 material of thickness greater than 0.1 micron.

9. **(Original)** An ionization chamber as recited in claim 8, wherein said thickness is also less than about 10 microns.

10. **(Original)** A system for analyzing a sample having constituents, said system comprising an ion source having an ionization chamber with inward facing surfaces defining an interior volume, wherein said interior volume is exposed to said constituents and said ionization chamber comprises an electrically-conducting substrate and an inward facing surface layer supported by said substrate, said layer including an inert material selected from the group consisting of Inconel™ 625, Inconel™ 601 and Hastelloy®.

11. **(Original)** A method of reducing interaction of a reactive analyte with a surface of an ion source, comprising applying a coating selected from the group consisting of Inconel™ 625, Inconel™ 601 and Hastelloy® to the surface.

12. **(Original)** A method of introducing a sample gas into an ionization chamber having inner surfaces of super alloy, comprising:

(a) ionizing a portion of said sample gas, thereby producing ions; and

(b) analyzing said ions with a mass-to-charge analyzer wherein within said ionization chamber the sample gas is only exposed to said surfaces of said super alloy.

13. **(New)** An ionization chamber for a mass spectrometer comprising a super alloy.

14. **(New)** A mass spectrometer comprising:

an ionization chamber comprising a super alloy.

15. **(New)** A method of analyzing a sample, comprising:

ionizing the sample in an ionization chamber comprising an inert super alloy to make sample ions; and

analyzing the sample ions in a mass analyzer.

16. **(New)** An ionization chamber comprising:

an inert super alloy that provides resistance to abrasion and corrosion and that has low iron content.

17. **(New)** A mass spectrometer comprising:

an ionization chamber comprising an inert super alloy that provides resistance to abrasion and corrosion and that has low iron content.

18. **(New)** A method of analyzing a sample, comprising:

a) ionizing a sample in an ionization chamber comprising an inert super alloy that provides resistance to abrasion and corrosion and that has low iron content to make sample ions; and

b) analyzing the sample ions in a mass analyzer.

19. **(New)** An ionization chamber comprising:

at least 58% nickel, 20-23% chromium, 0.1% carbon, 0.5% manganese, 0.5% silicon, no more than 5.0% iron, no more than 0.015% sulfur, no copper, no more than 0.40% aluminum, no more than 0.40% titanium, no more than 0.015% lead, no more than 1% cobalt, 3.15-4.15% niobium, no boron and 8.0-10.0% molybdenum;

58.0-63.0% nickel, 21.0-25.0% chromium, 1.0-1.7% aluminum, less than 0.10% carbon, less than 1.0% manganese, less than 0.015% sulfur, less than 0.50% silicon, less than 1.0% copper and the remaining percent iron; or

0-0.4% aluminum, 0-0.016% boron, 0-0.5% columbium and niobium, 1.5-5.0% cobalt, 16-30% chromium, 0-2% copper, 3-20% iron, 0.5-1.5% manganese, 2.5-16% molybdenum, 43-71% nickel, 0.08-5% silicon, 0.07% or less titanium, 4% or less tungsten and 0.35% or less vanadium.

20. **(New)** A mass spectrometer comprising:

an ionization chamber comprising:

at least 58% nickel, 20-23% chromium, 0.1% carbon, 0.5% manganese, 0.5% silicon, no more than 5.0% iron, no more than 0.015% sulfur, no copper, no more than 0.40% aluminum, no more than 0.40% titanium, no more than 0.015% lead, no more than 1% cobalt, 3.15-4.15% niobium, no boron and 8.0-10.0% molybdenum;

58.0-63.0% nickel, 21.0-25.0% chromium, 1.0-1.7% aluminum, less than 0.10% carbon, less than 1.0% manganese, less than 0.015% sulfur, less than 0.50% silicon, less than 1.0% copper and the remaining percent iron; or

0-0.4% aluminum, 0-0.016% boron, 0-0.5% columbium and niobium, 1.5-5.0% cobalt, 16-30% chromium, 0-2% copper, 3-20% iron, 0.5-1.5% manganese, 2.5-16% molybdenum, 43-71% nickel, 0.08-5% silicon, 0.07% or less titanium, 4% or less tungsten and 0.35% or less vanadium.

21. **(New)** A method of analyzing a sample, comprising::

a) ionizing a sample in an ionization chamber comprising:

at least 58% nickel, 20-23% chromium, 0.1% carbon, 0.5% manganese, 0.5% silicon, no more than 5.0% iron, no more than 0.015% sulfur, no copper, no more than 0.40% aluminum, no more than 0.40% titanium, no more than 0.015% lead, no more than 1% cobalt, 3.15-4.15% niobium, no boron and 8.0-10.0% molybdenum;

58.0-63.0% nickel, 21.0-25.0% chromium, 1.0-1.7% aluminum, less than 0.10% carbon, less than 1.0% manganese, less than 0.015% sulfur, less than 0.50% silicon, less than 1.0% copper and the remaining percent iron; or

0-0.4% aluminum, 0-0.016% boron, 0-0.5% columbium and niobium, 1.5-5.0% cobalt, 16-30% chromium, 0-2% copper, 3-20% iron, 0.5-1.5%

manganese, 2.5-16% molybdenum, 43-71% nickel, 0.08-5% silicon, 0.07% or less titanium, 4% or less tungsten and 0.35% or less vanadium,

to make sample ions; and

b) analyzing the sample ions in a mass analyzer.

22. **(New)** An ionization chamber comprising Inconel™ 625, Inconel™ 601 or Hastelloy®.

23. **(New)** A mass spectrometer comprising:

an ionization chamber comprising Inconel™ 625, Inconel™ 601 or Hastelloy®.

24. **(New)** A method of analyzing a sample, comprising:

a) ionizing a sample in an ionization chamber comprising Inconel™ 625, Inconel™ 601 or Hastelloy® to make sample ions; and

b) analyzing the sample ions in a mass analyzer.